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ABSTRACT

Described is a program developed to teach a visual symbol system of nonspeech communication for persons who are severely mentally handicapped and multiply handicapped. Included in the receptive language program are descriptions of the following program components: candidate selection guidelines, interdisciplinary assessment, materials (visual communication display and symbol cards), the visual or gestural response mode, the protocol, the lesson plan (teaching, reinforcement, and correction procedures), random schedules (for symbol placement, verbal cuing, card placement), 18 program guidelines, record keeping, retention testing, and visual symbol communication instruction. Suggested readings and materials are included. (BD)

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Visual Symbol Communication Instruction

Part I: Receptive Instruction

Experimental Edition

by

PAMELA S. ELDER, M.A.

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The contents of this manual are offered as one method for teaching visual symbols for the purpose of nonspeech communication. This is an experimental edition, however, and we would welcome any comments or suggestions regarding its usage. Such correspondence may be forwarded to:

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By the sheer nature of the task, the development of any instructional program for individuals who are severely multiply handicapped must be an interdisciplinary effort. This program could not have been developed without the skill, talent, and flexibility of the DESEMO Project staff. My gratitude goes to each of them.

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DESEMO PROJECT

The special project, "Demonstration of Service Modalities for the Non-Communicative Developmentally Disabled" (DESEMO), is an interdisciplinary mental health project which was established in late 1974 by the Alabama Department of Mental Health, Division of Mental Retardation, in conjunction with the University of Alabama in Birmingham and its University Affiliated Facility, The Chauncey Sparks Center for Developmental and Learning Disorders.

The overall goals of the project are to demonstrate that an interdisciplinary team of mental health professionals can initiate evaluative techniques which will more accurately assess the capabilities of individuals who are noncommunicative and who function as profoundly retarded, to plan habilitation goals that result in a continuum of realistic care, and to develop training techniques which would provide maximum amelioration of the debilitating conditions commonly associated with the total-care individual.

The materials contained within this text are part of the total program which the project is developing in order to provide a richer quality of life and a vehicle by which the individual requiring total care will realize his or her full potential.

Joan S. Bergman, Ph.D.
Project Director

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INTRODUCTION

In the past several years professional therapeutic objectives have shifted from the development of speech as the primary communication mode to the development of nonspeech communication for severely physically handicapped persons whose neuromuscular dysfunction prevents functional speech. Numerous communication aids and techniques for indicating and transmitting messages are rapidly becoming available. These aids range from readily homemade communication boards to sophisticated electromechanical and computer devices. In addition, pictures, rebuses, Blissymbols, and traditional orthography are utilized by these aids as visual symbol systems through which nonvocal, severely physically handicapped persons may communicate. Individuals who are cognitively normal, and more recently, severely mentally handicapped, have successfully employed these communication aids and visual symbol systems as augmentative communication modes.

In reviewing this recently developed programming information, the educator or therapist is presented with numerous decisions: selecting the appropriate candidate for nonspeech communication, selecting the appropriate nonvocal communication technique/aid, selecting the appropriate symbol system and vocabulary, and selecting a methodology for teaching a chosen symbol set and facilitating its usage in respondent and spontaneous nonspeech communication. It is in this last selection process that the educator/therapist finds the fund of information scanty. However, valuable teaching guidelines are available, and aided by such guidelines, a knowledge of normal language acquisition, clinical expertise, and time, the educator/therapist can succeed in nonspeech communication programming.

With the increase of nonspeech communication programming with severely mentally and physically handicapped individuals living in residential facilities or attending day treatment centers, new needs arise. The utilization of paraprofessionals in programming is needed and consequently the development of a specific and efficient training protocol for their use. In addition, because the traditional assessment and training response of pointing is not always appropriate for this population, a protocol which employs either a gestural or a *visual* response mode would be maximally beneficial. It was with these needs in mind that the DESEMO Project developed *Visual Symbol Communication Instruction*.

PURPOSE OF THE PROGRAM

Visual Symbol Communication Instruction was developed in order to provide a *methodology for teaching* a chosen visual symbol system and facilitating its usage in nonspeech communication. The choices of the appropriate symbol system, vocabulary, and nonspeech communication technique/aid are left to the discretion of the instructor; however, Blissymbol instruction was conducted in the field testing of this procedure.

The teaching methodology of *Visual Symbol Communication Instruction* is divided into two parts. Part I: Receptive Instruction, found in this manual, is designed to teach a

visual symbol system to individuals having receptive vocabulary skills. It should be noted that the purpose of the program is not to develop linguistic concepts but rather to teach visual symbols for already acquired vocabulary. Part II: Symbol Respondent Communication, currently in development, will teach systematically symbol usage in respondent communication with nonspeech communication aids.

To accomplish the stated purpose of Receptive Instruction, the program was developed with four specific purposes. These are as follows:

To teach systematically any one of a variety of visual symbol systems.

As previously stated, the selection of a particular symbol system to teach is left to the discretion of the instructor. Depending on the age, education, and cognitive level of the student, pictures, rebuses, Blissymbols, or arbitrary abstract shapes may be chosen for instruction.

To allow for implementation by professionals or paraprofessionals.

With the growing acceptance of nonspeech communication programming with populations of individuals who are profoundly physically handicapped and mentally retarded, caseloads are increasing. The professional therapist or educator, already in a race against time, may welcome a developed protocol. In addition, an increase in caseload can only be accommodated with the participation of paraprofessionals in programming. These vital assistants must follow a clear and specific instructional format.

To provide a specific training protocol.

A program which provides sequential instructional steps and provides complete data collection can only clarify and expedite the learning process, assist in analyzing symbol learning difficulties, and promote retention skills. Complete data becomes particularly valuable in evaluating the dynamics of Blissymbol learning, a relatively new frontier.

To allow for either a gestural or a visual response mode.

Originally developed for the individual who is severely physically handicapped and incapable of the traditional pointing response, the program's particular novelty lies in its procedural design for the visual response. The protocol, however, has been successfully adapted for those individuals capable of pointing.

CANDIDATE SELECTION GUIDELINES

Candidates for *Visual Symbol Communication Instruction* should exhibit behaviors typically required for nonspeech communication programming. They should be nonverbal or incapable of functional, intelligible speech. They should exhibit receptive language which may be paired with visual symbols. They should attend to a task approximately five minutes, exhibiting appropriate attention to verbal and visual stimuli. They should exhibit and maintain eye contact with people, objects, and pictures for at least three seconds on command. They should exhibit interactive social behavior which would indicate their need and desire to communicate.

To assist in the candidate selection process, the following description of the students initially enrolled in *Visual Symbol Communication Instruction* is offered. The twenty students selected for field testing ranged in age from three years, nine months, to forty-two years. Fifteen students lived in a residential facility for the mentally retarded. Five students lived at home and attended public school or day treatment centers. Students were ambulatory or total-care spastic quadriplegics. The mental retardation level ranged from "profound" to "mild." Optometric evaluation revealed vision function to be within normal limits in ten students. Ten students exhibited significant visual involvement, including retinitis pigmentosa, optic atrophy, hyperopia, myopia, esotropia, strabismus, and glaucoma. Corrective lenses were prescribed or worn by eight students. Audiologic evaluation indicated hearing sensitivity to be within normal limits in nineteen students with one student having a mild to moderate conductive loss. Students exhibited vocabulary recognition ages on the *Peabody Picture Vocabulary Test* ranging from two years, two months, to ten years, five months. Performance on the *Carrow Test for Auditory Comprehension of Language*, adapted to allow a visual response for some students, resulted in Age Equivalency scores ranging from three years to six years, nine months. The students' communication attempts were at best one- and two-syllable responses which were under poor voluntary control and were inconsistently intelligible to people in the everyday environment. Additional communication included facial expressions, slight head movements, or eye localization for "yes-no" responses. Such communication attempts were essentially nonfunctional and inconsistent with receptive language performances. Prior to program placement, judgements were made regarding an individual's primary response mode.

INTERDISCIPLINARY ASSESSMENT

As *Visual Symbol Communication Instruction* may be used with persons who are severely-profoundly retarded and multiply handicapped, the importance of an interdisciplinary effort becomes apparent. Interdisciplinary assessment and treatment prior to and during programming is appropriate and vital. An optometric evaluation is critical to insure program adaptations to accommodate visual handicaps. Audiologic assessment insures maximal hearing for the student. Physical Therapy and Occupational Therapy are

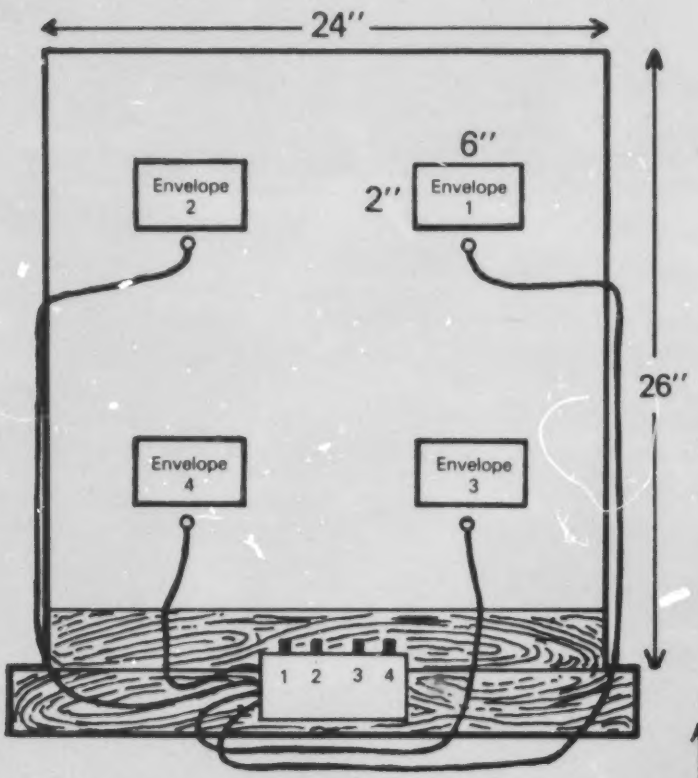
mandatory to position the student accurately for programming. This is particularly vital when utilizing a visual response mode and essential in making necessary adaptations for a pointing response. In addition, advice about which body parts may be used most successfully in communication attempts and about the range of motion of those body parts is necessary before expressive programming begins. Behavioral assessment and treatment may be necessary during instruction with some individuals. Without the expertise and assistance of many disciplines, intervention with the multiply handicapped will not be effective, and candidate selection for nonspeech instruction will be restricted. Here the shortcoming lies not with the student but with the instructor.

MATERIALS

Visual Communication Display

The novelty of the program, which was originally developed for those individuals who are severely physically handicapped and are incapable of the traditional pointing response, lies in its procedural design for the visual response. This visual response is accomplished by using the Visual Communication Display (VCD) which is a 26 x 24 x 1/4 inch acrylite sheet mounted on edge and held in position by a wedged clamp attached to a wooden base. Centered in each quadrant of the VCD is a fixed, clear, 2 x 6 inch plastic envelope, open at the top, below which is a red pointer-light fed by a small transformer which converts a normal household current of 110 VAC to 24 VAC. Each light is mounted to the VCD through a drilled hole and is independently controlled by momentary-on push buttons mounted on a small switch box attached to the VCD base. These pointer-lights have particular programming significance for students using either a visual or a pointing response as they not only reinforce correct responses but provide directional correction for incorrect responses. A materials list and instructions for building a VCD are provided in this manual. Materials cost approximately $25.

Figure 1. Pictoral Diagram of Visual Communication Display



Materials:

- Acrylite board (24" x 26" x 1/4")
- Aluminum Chassis Box
- Push button switches (momentary contact preferred due to low cost and silent feature)
- Speaker wire (twin lead)
- Power transformer, TRIAD F-133P 15 volts at 0.100 A. RMS
- Drake lamp holders
- Four lamps to fit holders
- Wooden base with wedged clamp
- Four thin acetate sheets (2" x 6")

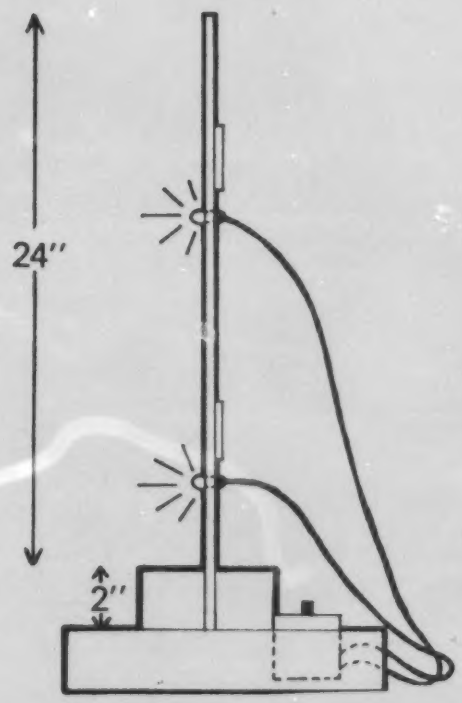
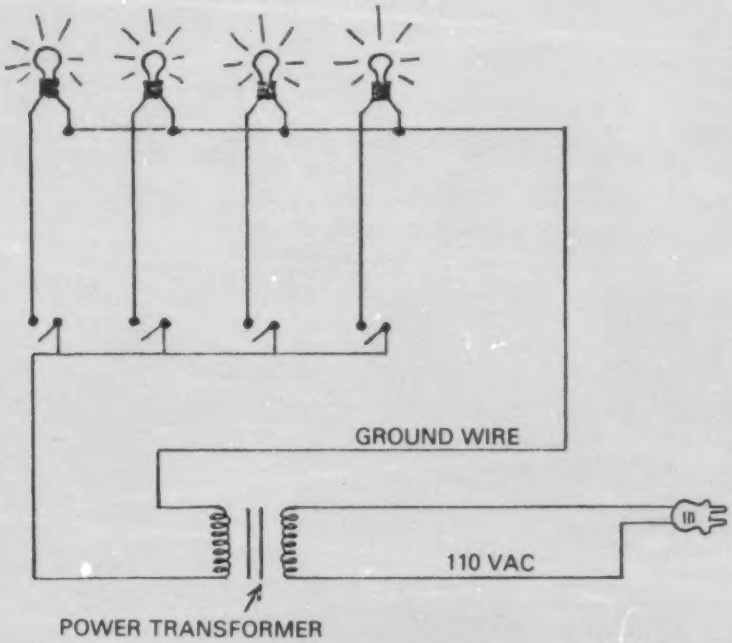


Figure 2. Schematic of Visual Communication Display



Symbol Cards

The particular symbol system chosen should be determined by the cognitive level of the student. The protocol may be used with either Blissymbols, rebuses, or pictures. Blissymbols which are both pictographs and ideographs depict more abstract language; however, because of their ideographic design, they may be more difficult to learn. Rebuses are more pictographic in design and may be easier to learn than the Blissymbols. Pictures, of course, are the most concrete visual symbols; but abstract language concepts are not easily depicted and are usually excluded from this symbol system. The receptive vocabulary skills of the student will assist in determining which symbol system to teach. Whatever the symbol system chosen, each symbol with its corresponding word printed under it should be mounted on the front of a durable three-inch square laminated card. The corresponding word alone should be printed on the back of the card. Three additional three-inch square laminated blank cards are necessary.

THE VISUAL OR GESTURAL RESPONSE MODE

The program lesson plans are written specifically for a visual response mode. Prerequisite skills and objectives are written in terms of visual criteria. Likewise, instructions read: "S, LOOK AT _____ (symbol)." Initial program steps teach the student the requirements of a visual response. The student must scan the presented symbols on the VCD within five seconds and fixate on the symbol of choice, and then he must maintain eye fixation on that symbol of choice for three seconds before reinforcement or correction occurs. These visual response requirements are necessary to insure the instructor's accuracy in judging a response. It is vital that the response requirements are maintained throughout instruction.

The visual response mode may be employed by those individuals capable of responding gesturally. In those cases where a gestural response is extremely slow or precipitates behaviors or reflex postures which intefere with programming, a visual response may be the more efficient mode.

The protocol may be adapted for responding gesturally. Instructions may be changed to read "S, POINT TO (TOUCH, SHOW ME) _____ (symbol)" and verbal reinforcement to read "GOOD POINTING." In these instances, the student learns the requirements of the gestural response. The student must scan the presented symbols on the VCD within five seconds and point to the symbol of choice, and then he must maintain the hand on that symbol of choice for three seconds before reinforcement or correction occurs.

THE PROTOCOL

The protocol of *Visual Symbol Communication Instruction*, Part I: Receptive Instruction includes 25 sequential steps designed with three major objectives. They are to orient the student toward the method of learning, to teach systematically a selected visual symbol system, and to enhance symbol retention. Of the 25 sequential steps, 21 steps are compulsory and 4 steps are supplementary. The supplementary steps contain instruction

received previously in compulsory steps. The steps were made supplementary at appropriate points in the program sequence in order to allow a student who does not need them to proceed through instruction as rapidly as he can. However, these supplementary steps are provided for the student who finds the learning task from one compulsory step to another too complex. When following the manual's lesson plans, care should be taken not to conduct inadvertently a supplementary step, although it is placed on a following page. Rather, the instructor should skip the supplementary lesson plan page when it is not needed and conduct instruction on the next compulsory step.

The sequence of symbol instruction seen in Figure 3 is summarized below in order to provide an overview of the program.

Symbol Introduction

Phase I: Symbol Introduction, Identification steps orient the student to the method of learning through demonstration and card rotation tasks which teach not only a symbol's meaning but also the requirements of the visual or gestural response, the saliency of the symbol, not the card, and the possible variability of symbol locations on the VCD.

PHASE I. SYMBOL INTRODUCTION

Part A. Symbol Identification

The first symbol is introduced.

Step 1. Demonstration

The first symbol card is presented in the upper-left envelope pocket of the VCD as viewed by the student. Following the Demonstration Procedure the instructor tells the student to look at the symbol for three trials.

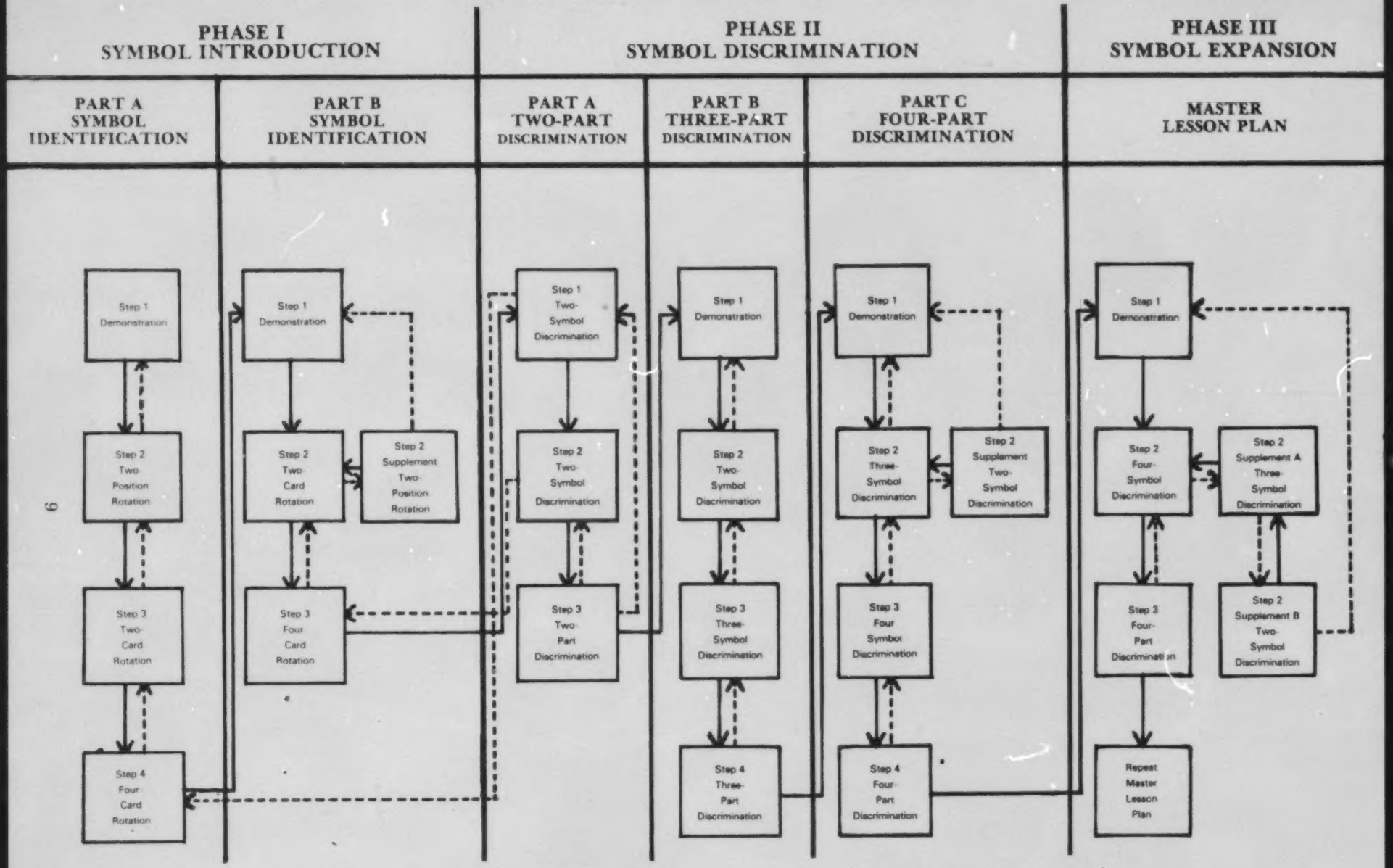
Step 2. Two-Position Rotation

The first symbol card is randomly rotated ten times between the top two envelope pockets while the instructor tells the student to look at the symbol. Rotation steps were included to prevent the student from associating a symbol with a particular place on the VCD.

Step 3. Two-Card Rotation

The first symbol card and a blank card are randomly rotated ten times between the top two envelop pockets while the instructor tells the student to look at the symbol. This step promotes the student's attending to the symbol as meaningful rather than to the card itself.

Figure 3. Sequence of Symbol Instruction



→ Solid arrow reflects program sequence when step criterion is made.

- - - → Broken arrow reflects program sequence when step criterion is not made.

Step 4. Four-Card Rotation

The first symbol card and three blank cards are randomly rotated ten times among all four envelope pockets while the instructor tells the student to look at the symbol. This step complicates the task by moving the symbol to all quadrants of the VCD.

Part B. Symbol Identification

The second symbol is introduced

Step 1. Demonstration

The second symbol card is presented following the same procedure as Part A, Step 1.

Step 2. Two-Card Rotation

The second symbol card is presented following the same procedure as Part A, Step 3.

Step 2. Supplement. Two-Position Rotation

The second symbol card is presented following the same procedure as Part A, Step 2.

Step 3. Four-Card Rotation

The second symbol card is presented following the same procedure as Part A, Step 4.

At this point two symbols have been taught. In addition, the student knows the requirements of the visual response, knows the salient feature is the symbol not the card, and knows that a symbol may randomly appear at any of four points on the VCD. Steps which develop these skills are now discontinued. We proceed to a progression of discrimination tasks with symbols previously learned in isolation.

Symbol Discrimination

Phase II: Symbol Discrimination steps systematically increase both the number of symbols learned and the complexity of symbol learning by the progressive presentation of two-, three-, and four-part discrimination tasks.

PHASE II. SYMBOL DISCRIMINATION

Part A. Two-Part Discrimination

Step 1. Two-Symbol Discrimination

The first and second symbol cards are randomly rotated ten times between the top two envelope pockets while the instructor tells the student to look at the first symbol learned.

Step 2. Two-Symbol Discrimination

The first and second symbol cards are randomly rotated ten times between the top two envelope pockets while the instructor tells the student to look at the second symbol learned.

Step 3. Two-Part Discrimination

The first and second symbol cards remain in the top two envelope pockets while the instructor tells the student to look at a symbol randomly selected between the two. This is repeated for ten trials.

Part B. Three-Part Discrimination

The third symbol is introduced.

Step 1. Demonstration

The third symbol card is presented following the same procedure as Phase I, Part A, Step 1.

Step 2. Two-Symbol Discrimination

The second and third symbol cards are randomly rotated ten times between the top two envelope pockets while the instructor tells the student to look at the third symbol learned.

Step 3. Three-Symbol Discrimination

The first, second, and third symbol cards are randomly rotated ten times among three designated envelope pockets while the instructor tells the student to look at the third symbol learned.

Step 4. Three-Part Discrimination

The first, second, and third symbol cards remain in three designated envelope pockets while the instructor tells the student to look at a symbol randomly selected from among the three. This is repeated for ten trials.

Part C. Four-Part Discrimination

The fourth symbol is introduced.

Step 1. Demonstration

The fourth symbol card is presented following the same procedure as Phase I, Part A, Step 1.

Step 2. Three-Symbol Discrimination

The second, third, and fourth symbol cards are randomly rotated ten times among three designated envelope pockets while the instructor tells the student to look at the fourth symbol learned.

Step 2. Supplement, Two-Symbol Discrimination

The fourth and third symbol cards are randomly rotated ten times between the top two envelope pockets while the instructor tells the student to look at the fourth symbol.

Step 3. Four-Symbol Discrimination

The first, second, third, and fourth symbol cards are randomly rotated ten times to all envelope pockets while the instructor tells the student to look at the fourth symbol learned.

Step 4. Four-Part Discrimination

The first, second, third, and fourth symbol cards remain in the envelope pockets while the instructor tells the student to look at a symbol randomly selected from among the four. This is repeated for ten trials.

Symbol Expansion

Phase III: Symbol Expansion is the Master Lesson Plan which is repeated for all symbol instruction subsequent to Phases I and II in building systematically the pool of learned symbols. The protocol design is structured so that symbol retention is promoted through the repetition of symbol exposure. Thus, in following the steps of the Master Lesson Plan, the student not only learns a new symbol but also reviews three selected symbols previously learned.

PHASE III. SYMBOL EXPANSION: MASTER LESSON PLAN

A new symbol is introduced.

Step 1. Demonstration

A new symbol card is presented following same procedure as Phase I, Part A, Step 1.

Step 2. Four-Symbol Discrimination

A new symbol card and three previously learned symbol cards are randomly rotated ten times to designated envelope pockets while the instructor tells the student to look at the new symbol.

Step 2. Supplement A. Three-Symbol Discrimination

A new symbol card and two previously learned symbol cards are randomly rotated ten times to designated envelope pockets while the instructor tells the student to look at the new symbol.

Step 2. Supplement B. Two-Symbol Discrimination

A new symbol card and one previously learned symbol card are randomly rotated ten times to designated envelope pockets while the instructor tells the student to look at the new symbol.

Step 3. Four-Part Discrimination

A new symbol card and three previously learned symbol cards remain in the envelope pockets while the instructor tells the student to look at a symbol randomly selected from among the four. This is repeated for ten trials.

THE LESSON PLAN

Each step of the protocol is written in lesson plan form with prerequisite skills, task objectives, criterion, and necessary preparation and materials described. Three basic procedures are followed in each step lesson plan. They are the Teaching, Reinforcement, and Correction Procedures.

Teaching Procedure

The Teaching Procedure tells the instructor where to place the symbol cards on the VCD and what symbol(s) to cue verbally. The following is an example of the Teaching Procedure.

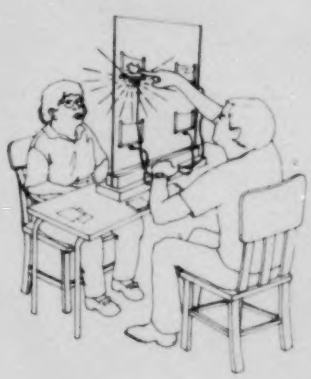
STEP 2: Two-Position Rotation

Place first symbol card in envelope 1, and say,

S, (establish eye contact)

LOOK AT _____ (first symbol).

The *Demonstration Procedure* is a kind of Teaching Procedure which is designed to compel the student to look at a particular symbol so that it may be taught. This is accomplished by the instructor's *simultaneously* looking at, pointing to, and naming the symbol as well as flashing the corresponding pointer-light under the symbol.



Reinforcement Procedure

The Reinforcement Procedure tells the instructor how to reinforce a correct response both verbally and manually. In addition, it states what step to proceed to, if criterion is achieved. The following is an example of the Reinforcement Procedure.

> If S looks at a symbol card for 3 seconds, flash corresponding pointer-light and say,
>
> GOOD!
>
> Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement.
>
> If criterion is made, go to Step 3.

Correction Procedure

The Correction Procedure provides the instructor with a graded sequence of correction attempts which allows for increasing assistance as needed by the student in order to correct a response. Along with verbal requests, assistance may include the flashing of the pointer-lights and the repeating of the Demonstration Procedure. The Correction Procedure also states which step to proceed to if criterion is not achieved. The following is an example of the Correction Procedure.

> If response is incorrect, repeat,
>
> S, (establish eye contact)
>
> LOOK AT _____ (first symbol).
>
> Turn on corresponding pointer-light,
>
> If response if correct, flash pointer-light, say,
>
> GOOD!
>
> and attempt criterion.
>
> If response is incorrect again, follow Demonstration Procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, return to Step 1.

RANDOM SCHEDULES

Each step's lesson plan also provides randomized schedules telling the envelope pocket in which a symbol card is placed or telling the symbol which is cued verbally. The following is a description of each schedule.

Random Schedules for Symbol Placement

The ten numbers reflect the *envelope positions* for a *single* symbol card's placement on the VCD for ten trials. Thus, in the following example, the only symbol card presented is placed in envelope 2 on the first trial, envelope 1 on the second trial, envelope 1 on the third, etc. Some steps include a blank card placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 2 1 1 1 2 2 1 2 1 1

In the next example, the only symbol card presented is placed in envelope 1 on the first trial, envelope 3 on the second trial, envelope 3 on the third trial, etc. while three blank cards are placed in the three remaining envelopes.

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 1 3 3 2 1 4 4 1 1 3

In the Random Schedules for First, Second, Third, Fourth, or New Symbol Placement, the ten numbers reflect the *envelope positions* for a symbol card's placement on the VCD for ten trials when two symbols are presented. Thus, in the following example, the *first* symbol card in instruction is placed in envelope 1 on the first trial, envelope 1 on the second trial, envelope 2 on the third trial, etc. The other symbol presented is placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR FIRST SYMBOL PLACEMENT: 1 1 2 2 1 1 1 2 2 1

In the next example, the *second* symbol card in instruction is placed in envelope 2 on the first trial, envelope 1 on the second trial, envelope 2 on the third trial, etc. The other symbol presented is placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR SECOND SYMBOL PLACEMENT: 2 1 2 1 2 2 2 1 1 1

In the third example, the *third* symbol card in instruction is placed in envelope 1 on the first trial, envelope 2 on the second trial, envelope 1 on the third trial, etc. The other symbol presented is placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR THIRD SYMBOL PLACEMENT: 1 2 1 1 2 1 2 1 2 1

In the fourth example, the *fourth* symbol card in instruction is placed in envelope 1 on the first trial, envelope 1 on the second trial, envelope 2 on the third trial, etc. The other symbol card presented is placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR FOURTH SYMBOL PLACEMENT: 1 1 2 1 1 2 2 1 2 2

In the last example, the *new* symbol card in instruction, each time the Master Lesson Plan is conducted, is placed in envelope 1 on the first trial, envelope 2 on the second trial, envelope 1 on the third trial, etc. The other symbol presented is placed in the opposite horizontal envelope.

RANDOM SCHEDULE FOR NEW SYMBOL PLACEMENT: 1 2 1 1 2 1 2 1 1 2

Random Schedule for Verbal Cueing.

The ten numbers reflect which symbol (first, second, third, or fourth) is *cued verbally* when the symbol cards *remain* in their envelopes. Thus, in the example below, two symbols are presented. The first symbol is cued verbally on the first trial. The first symbol is cued verbally on the second trial. The second symbol is cued verbally on the third trial, etc.

RANDOM SCHEDULE FOR VERBAL CUEING: 1 1 2 2 1 1 1 2 2 2

In the example below, three symbols are presented. The third symbol is cued verbally on the first trial and again on the second trial. The first symbol is cued verbally on the third. The second symbol is not cued verbally until the sixth trial.

RANDOM SCHEDULE FOR VERBAL CUEING: 3 3 1 1 3 2 1 2 2 1

In the example below, four symbols are presented. The fourth symbol is cued verbally on the first trial, the first symbol is cued on the second trial, and the third symbol is cued on the third trial. The second symbol is not cued until the sixth trial.

RANDOM SCHEDULE FOR VERBAL CUEING: 4 1 3 3 4 2 3 1 2 1

Random Card Placement

The ten numbers listed under each envelope position reflect which symbol (first, second, third, or fourth) is placed in that envelope for ten trials. Thus, in the example below, the fourth, second, and third symbol cards are placed in envelopes 1, 2, and 3 respectively on the first trial. The second, fourth, and third symbol cards are placed in envelopes 1, 2, and 3 respectively on the second trial, etc.

Random Card Placement

Envelope 1	Envelope 2	Envelope 3
4	2	3
2	4	3
3	2	4
4	2	3
2	3	4
3	4	2
4	2	3
4	3	2
2	3	4
3	2	4

In the example below, the fourth, first, second, and third symbol cards are placed in envelopes 1, 2, 3, and 4 respectively on the first trial. The third, first, fourth, and second symbol cards are placed in envelopes 1, 2, 3, and 4 respectively on the second trial, etc.

Random Card Placement

Envelope 1	Envelope 2	Envelope 3	Envelope 4
4	1	2	3
3	1	4	2
1	3	2	4
2	4	3	1
3	1	2	4
4	2	1	3
1	2	4	3
2	4	3	1
1	3	2	4
4	2	1	3

When following Random Card Placement schedules in the Master Lesson Plan, the instructor must arbitrarily assign numbers to the symbol cards before rotation is possible. This is done by filling in the symbols used in the four numbered blanks of Data Sheet B. These numbers will remain the numbers assigned to the particular symbols during the ten trials of the step. Numbers are assigned to four different symbols with each repetition of the Master Lesson Plan.

PROGRAM GUIDELINES

When conducting the program the instructor should observe the following guidelines.

Guideline 1: Language Assessment

As this program teaches visual symbols for an already acquired vocabulary, specific assessment of a candidate's receptive language is necessary prior to instruction. Standardized receptive language instruments will provide normative information which can assist in candidate selection and possibly programming; however, informal vocabulary testing may prove more valuable in selecting an individual's symbol vocabulary.

Guideline 2: Positioning

When conducting symbol instruction, the instructor sits behind the VCD in position to place symbol cards in designated envelope pockets and to manipulate light control buttons for teaching and reinforcement. The student making a visual response is positioned in front of the VCD with his sight-line level with and meeting the instructor's at a central point on the VCD. From these positions, the instructor may obtain the student's eye contact in programming procedures and may observe his eye movements to positioned symbol cards. The student making a pointing response is also positioned in front of the VCD; however, eye level is not as important.

Guideline 3: The Environment

Distracting auditory and visual stimuli should be minimized in the instruction room. This is particularly important in instructing those individuals using a visual response mode.

Guideline 4: The Session

It is recommended that instruction be given five times a week at the same time and place. Sessions typically last approximately twenty minutes; however, the instruction accomplished rather than the time involved is of primary importance. Therefore, for instructional purposes and data collection, a "session" is arbitrarily defined as a symbol teaching period in which a minimum of two program steps are completed, neither of which is a demonstration step nor a repetition of the previous session's last step when its criterion was achieved. There is no limit to the number of steps conducted during a session. The instructor should attempt to accomplish the requirements of a session in an instructional period.

Guideline 5: Step Sequence

All programming must begin with Phase I, Part A, Step 1 and proceed systematically through all appropriate steps as designated by each lesson plan. Progress to another step

is determined by performance on the current step. Arbitrary entrance or step selection is not consistent with the protocol design.

Guideline 6: The First Step

The first step of each new instructional period is a repetition of the preceding instructional period's last step *where criterion was achieved.*

Guideline 7: Trials

Each step consists of ten trials. Even if it becomes apparent that the student will not make criterion, all trials should be administered since they teach symbol meaning as well as sample learning.

Guideline 8: Criterion

Criterion for Demonstration steps is three consecutively correct responses in five trials. For steps other than Demonstration, criterion is 80% correct in 10 trials with three out of the last four responses correct.

Guideline 9: Changing Symbols

If criterion is not achieved after five attempts on a particular step, the symbol in instruction may be changed. Consideration should be given to the visual similarity of the symbols being taught together at this point. Vocabulary reassessment for the symbol in question may be necessary.

Guideline 10: Data Sheet Preparation

The instructor should project how many and which steps may be conducted during the session and have data sheets prepared in advance.

Guideline 11: Temporary Termination

Temporary termination of a session may occur under two circumstances. When three consecutively correct responses are not obtained in the five trials of a Demonstration Procedure, the session is temporarily terminated. When three incorrect responses occur during Correction Procedure, the session is temporarily terminated. Such termination consists of a three-minute pause in which the instructor is quietly occupied, providing no stimulation or social interaction. If disruptive behavior is the cause of a temporary termination or occurs during a temporary termination, behavioral management may be necessary. If time remains after the three-minute termination, the session may be resumed and the remaining trials attempted. If the time remaining is not sufficient for the continuation of the session, the session may be ended *after* the three-minute temporary termination.

Guideline 12: Task Request

The verbal cue, "S, LOOK AT (POINT TO) _____ (symbol)," given by the instructor to the student is a task request.

Guideline 13: Eye Contact

Before any task request is administered, eye contact between the student and instructor must be established. This may be done by calling the student's name, requesting the student to look at the instructor, or in some cases, tapping on a central point of the VCD. This eye contact is necessary for students responding gesturally as well as visually.

Guideline 14: Reinforcement Timing

When giving reinforcement for correct responses, the instructor should allow the students visual fixation on or pointing to a symbol card to be maintained for three seconds before reinforcing.

Guideline 15: Verbal Reinforcement

Although verbal reinforcement is written in the protocol as the instructor's saying, "GOOD!", any appropriate variations may be used. It is permissable for an instructor to reinforce verbally by saying, "I like the way you're looking (pointing)!" "Good job!" "You're doing well!" "Fine work!" etc.

Guideline 16: Manual Review

It is recommended that the instructor periodically review the manual in order to maintain the accuracy of instruction. This is particularly important during the first weeks of instruction when procedures are unfamiliar.

Guideline 17: Caps

All spoken words are printed in capital letters in the lesson plans. Quotation marks are omitted.

Guideline 18: "S"

Through out the manual, "S" is used as an abbreviation for "student." However, when seen in the lesson plan's task request, the "S" should be replaced by the student's name.

RECORD KEEPING

Accurate record keeping is necessary to evaluate progress and to analyze learning difficulties in symbol instruction. Several record sheets were developed for this purpose. Single copies of these record sheets are provided in the Appendix and may be reproduced.

Each step's lesson plan is written with preparation information which includes which data sheet to use. The following is a description of how each data sheet should be filled out before the session.

Data Sheet A

This data sheet is used as a flow sheet for demonstration, two-position rotation, two- and four-card rotation, two-symbol discrimination, and two-part discrimination steps. Fill in the following, using the necessary information provided in the step lesson plan (Figure 4).

1. Student's name
2. Date of session
3. Phase, part, and step
4. Concept(s) of symbol(s) being cued verbally
5. Random Schedule for Symbol Placement by writing the appropriate number for each of the ten trials

   or

   Random Schedule for Verbal Cueing by writing the first letter of the symbol name for each of the ten trials

Data Sheet B

This data sheet is used only once per step for three-and four-symbol discrimination and three- and four-part discrimination steps. Fill in the following, using the necessary information provided in the step lesson plan (Figure 5).

1. Student's name
2. Date of session
3. Phase, part, and step
4. Concept(s) of symbol(s) being instructed
5. Random Card Placement by writing the appropriate symbol name being taught for each of the ten trials (Figure 5).

   or

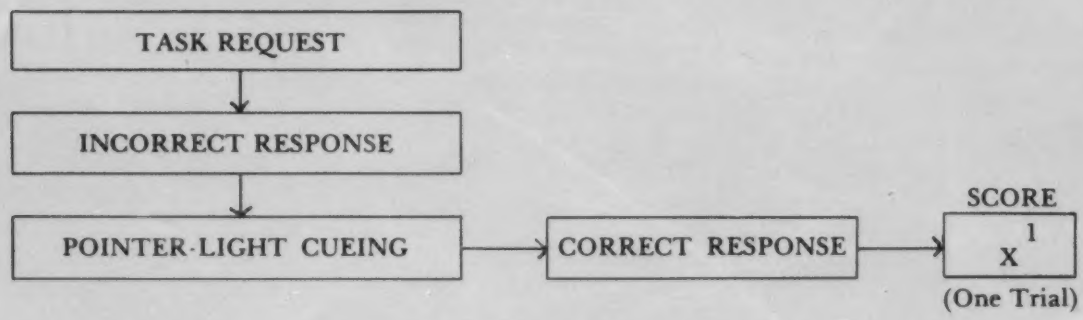
   Random Schedule for Verbal Cueing by writing only the symbol name being cued verbally in the appropriate envelope for each of the ten trials (Figure 6).

Scoring

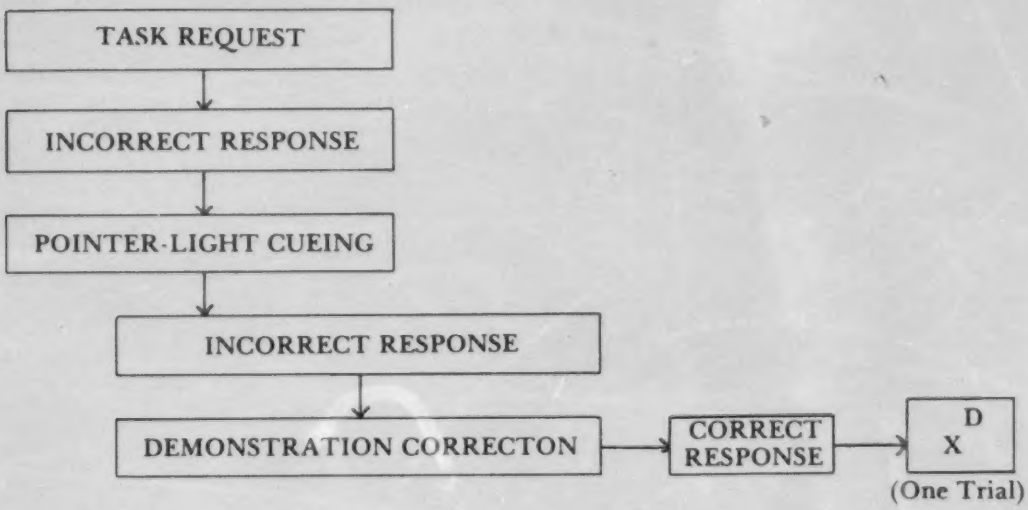
It is suggested that an (0) for correct responses and an (X) for incorrect responses be used in scoring. An (O) was chosen for correct responses as it does not visually distort the number or word written under it (Figures 4 and 5).

As incorrect responses necessitate the Correction Procedure, additional scoring notations are necessary to indicate how much correction was necessary. This data provides more objective information as to a student's particular learning difficulty. During the sequence of the Correction Procedure, all responses are considered *one* trial. Thus, we have the following scoring:

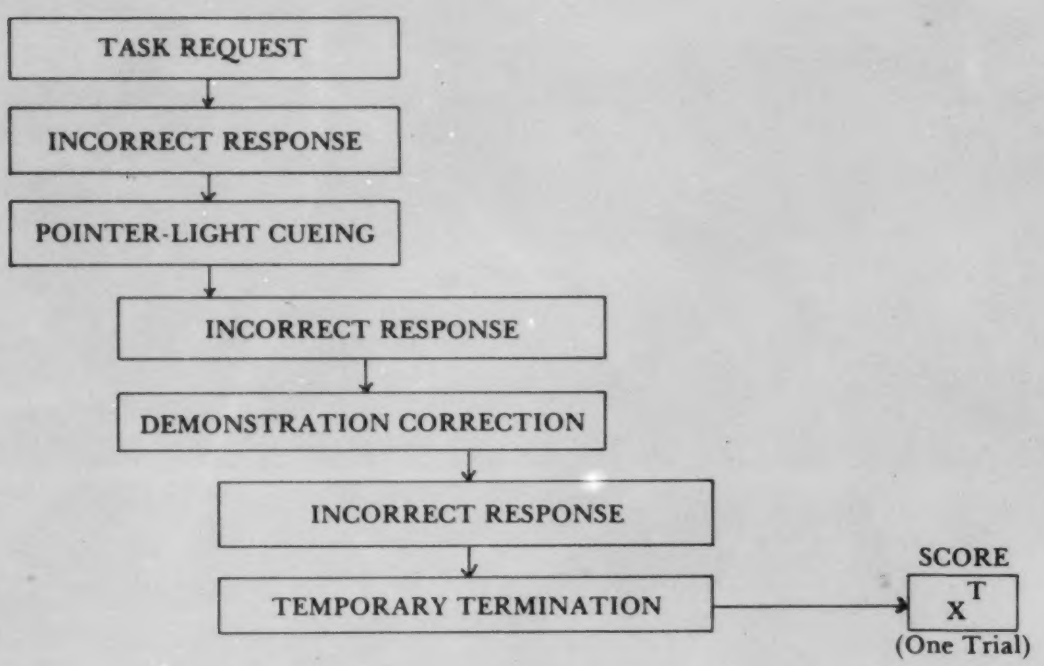
X^1 – One incorrect response necessitating pointer-light cueing in Correction Procedure, followed by a correct response.



X^D – Two incorrect responses necessitating pointer-light cueing and demonstration in Correction Procedure, followed by a correct response.



X^T — Three incorrect responses necessitating pointer-light cueing, demonstration, and temporary termination in Correction Procedure. No corrected response is given.



After the session, tabulate the percentage correct responses for each step and mark on the data sheet.

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA SHEET A

NAME: Andy Wilson

DATE	PHASE	PART	STEP	SYMBOL	1	2	3	4	5	6	7	8	9	10	% CORRECT
8/17	I	A	1	drink	0	0	0								
"	I	A	2	drink	1	2	1	1	2	2	X'	2	1	2	90%
"	I	A	3	drink	2	1	1	1	2	2	1	2	1	1	100%
"	I	A	4	drink	1	3	X'	X'	1	4	4	1	1	3	80%
8/18	I	A	4	drink	1	3	3	2	1	4	4	1	1	3	100%
"	I	B	1	food	0	0	0								
"	I	B	2	food	X'	X'	1	2	X'	1	1	2	2	2	70%
"	I	B	2 supp	food	1	2	1	2	2	1	2	2	2	1	100%
"	I	B	2	food	1	2	1	2	1	X'	1	2	2	2	90%
"	I	B	3	food	2	3	X'	X'	2	1	X'	X'	4	2	60%
8/19	I	B	2	food	1	2	1	2	1	1	1	2	2	2	100%
"	I	B	3	food	2	3	4	1	2	1	3	3	4	2	100%
"	II	A	1	drink	1	1	2	2	1	1	1	2	2	1	100%
"	II	A	2	food	2	X'	2	1	2	X'	2	1	1	1	80%
"	II	A	3	drink/food	F	F	D	D	F	F	F	D	D	D	100%
"	II	B	1	toilet	0	0	0								
8/20	II	B	1	toilet	0	0	0								
"	II	B	2	toilet	X'	2	1	X'	2	1	2	1	2	1	80%
"	II	B	4	drink food toilet	T	T	D	D	X'	F	D	F	F	D	90%
"	II	C	1	more	0	0	0								

Figure 4: Scoring With Data Sheet A

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA SHEET B

NAME: Andy Wilson DATE: Sept. 1

PHASE: II PART: C STEP: 3

SYMBOLS: 1. drink 3. toilet

2. food 4. more

RANDOM CARD PLACEMENT

TRIALS	ENVELOPE 1	ENVELOPE 2	ENVELOPE 3	ENVELOPE 4
1	~~more~~ D	drink	food	toilet
2	toilet	drink	(more)	food
3	drink	toilet	food	(more)
4	food	~~more~~ I	toilet	drink
5	toilet	drink	food	(more)
6	(more)	food	drink	toilet
7	drink	food	(more)	toilet
8	food	(more)	toilet	drink
9	drink	toilet	food	(more)
10	(more)	food	drink	toilet

% Correct: 80%

Figure 5: Scoring with Data Sheet B and Random Card Placement

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA SHEET B

NAME: Andy Wilson DATE: Sept 2

PHASE: II PART: C STEP: 4

SYMBOLS: 1. drink 3. toilet

2. food 4. more

RANDOM CARD PLACEMENT

TRIALS	ENVELOPE 1	ENVELOPE 2	ENVELOPE 3	ENVELOPE 4
1				toilet
2	more			
3	more			
4			~~food~~ °	
5				toilet
6		drink		
7				toilet
8		drink		
9	more			
10				toilet

% Correct: 90%

Figure 6: Scoring with Data Sheet B and Random Schedule for Verbal Cueing.

Data Flow Sheet

This data sheet includes the sequence of all steps conducted and provides pertinent information from Data Sheets A and B. It is optional whether this data sheet is used; however, it provides a concise picture of a student's percentage correct performance as he moves through instruction (Figure 7). Fill in the following information:

1. Student's name
2. Date of session
3. Phase, part, and step
4. Number of trials per step
5. Number of correct responses per step
6. Percentage of correct responses per step
7. Instructor's initials

Symbol Information Sheet

This sheet is used to list all symbols introduced in instruction. Each symbol is given a corresponding number as it is introduced (Figure 8). Fill in the following information:

1. Student's name
2. Number assigned to symbol as it is introduced
3 Name of symbol
4. Date symbol was first introduced
5. Date each symbol is used in rotation

Numbers for Symbol Selection

When conducting symbol instruction with the Master Lesson Plan, the instructor must refer to Table 1 to determine which symbols are selected for rotation with the new symbol. Three columns of information are provided. The *Symbols Learned* column reflects the numbers assigned to symbols taught previously. The *Symbols in Instruction* column reflects the number assigned to the particular symbol being taught currently. The *Numbers for Symbol Selection* column reflects the numbers assigned to symbols taught previously which are to be used in rotation with the symbol in instruction currently. The instructor then refers to the numbers listed on the Symbol Information Sheet to determine which symbols to select for rotation. The Numbers for Symbol Selection is arranged so that no symbol is selected for rotation more than five times. Numerous symbols are not rotated as frequently. The Numbers for Symbol Selection table is provided for teaching only one-hundred symbols.

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA FLOW SHEET

NAME: Andy Wilson

DATE	PHASE	PART	STEP	NO. TRIALS	NO. CORRECT RESPONSES	% CORRECT	INITIAL
8/17	I	A	1	3	3	100	[illegible]
8/17	I	A	2	10	9	90	[illegible]
8/17	I	A	3	10	10	100	[illegible]
8/17	I	A	4	10	8	80	[illegible]
8/18	I	A	4	10	10	100	[illegible]
8/18	I	B	1	3	3	100	[illegible]
8/18	I	B	2	10	7	70	[illegible]
8/18	I	B	2 supp.	10	10	100	[illegible]
8/18	I	B	2	10	9	90	[illegible]
8/18	I	B	3	10	6	60	[illegible]
8/19	I	B	2	10	10	100	[illegible]
8/19	I	B	3	10	10	100	[illegible]
8/19	II	A	1	10	10	100	[illegible]
8/19	II	A	2	10	8	80	[illegible]
8/19	II	A	3	10	10	100	[illegible]
8/19	II	B	1	3	3	100	[illegible]
8/20	II	B	1	3	3	100	[illegible]
8/20	II	B	2	10	8	80	[illegible]
8/20	II	B	3	10	8	80	[illegible]

Figure 7: Recording with Data Flow Sheet

VISUAL SYMBOL COMMUNICATION INSTRUCTION
SYMBOL INFORMATION SHEET

NAME: Andy Wilson

SYMBOL NUMBER	SYMBOL NAME	DATE INTRODUCED	DATES OF ROTATION USAGE
1	yes	8/16/76	9/2, 9/3, 9/23, 9/27, 9/28
2	no	8/20/76	9/2, 9/10, 9/13, 9/15, 9/16
3	drink	8/26/76	9/2, 9/3, 9/9, 9/15, 9/23
4	food	8/30/76	9/3, 9/9, 9/10, 9/13, 9/16
5	cottage	9/2/76	9/9, 9/21, 9/22, 9/23, 10/20
6	wheelchair	9/3/76	9/9, 9/10, 9/15, 9/16, 9/21
7	eye	9/9/76	9/13, 9/24, 10/4, 10/21, 11/17
8	ear	9/10/76	9/22, 10/4, 10/8, 10/12, 10/20
9	mouth	9/13/76	9/22, 10/14, 10/19, 11/22, 12/14
10	hand	9/15/76	9/21, 9/27, 11/13, 12/13
11	man	9/16/76	9/24, 9/30, 10/1, 10/6, 10/8
12	woman	9/21/76	9/30, 11/1, 11/8, 12/12
13	more	9/22/76	10/12, 10/14, 10/19, 11/3, 11/10
14	happy	9/23/76	9/27, 9/28, 10/1, 10/4, 10/6
15	sad	9/24/76	10/1, 10/22, 11/12, 11/13, 12/13
16	teacher	9/27/76	10/21, 10/22, 11/10, 11/12, 11/18
17	want	9/28/76	10/14, 11/12, 12/7, 2/8, 2/17
18	I	9/30/76	10/6, 10/8, 10/20, 11/3
19	Sarah	10/1/76	10/12, 10/14, 12/6, 12/13, 2/4
20	toilet	10/4/76	11/3, 1/14, 2/8
21	school	10/6/76	11/19, 1/4, 1/25

Figure 8: Recording With Symbol Information Sheet

VISUAL SYMBOL COMMUNICATION INSTRUCTION

SYMBOLS LEARNED	SYMBOL IN INSTRUCTION	NUMBERS FOR SYMBOL SELECTION		
		I	II	III
1-4	5	1	3	2
1-5	6	4	3	1
1-6	7	4	3	5
1-7	8	4	2	6
1-8	9	7	2	4
1-9	10	3	7	2
1-10	11	6	2	4
1-11	12	5	10	6
1-12	13	9	5	8
1-13	14	3	1	5
1-14	15	9	11	7
1-15	16	10	1	14
1-16	17	6	1	14
1-17	18	6	12	11
1-18	19	14	15	11
1-19	20	7	14	8
1-20	21	11	18	14
1-21	22	11	18	8
1-22	23	8	19	13
1-23	24	19	9	17
1-24	25	18	8	5
1-25	26	10	7	16
1-26	27	16	15	12
1-27	28	16	13	17
1-28	29	12	15	25
1-29	30	13	21	18
1-30	31	24	13	10
1-31	32	23	20	25
1-32	33	29	22	12
1-33	34	16	12	17
1-34	35	33	28	32
1-35	36	21	27	16
1-36	37	26	33	21
1-37	38	22	9	24
1-38	39	37	29	15
1-39	40	19	31	34
1-40	41	27	39	30
1-41	42	24	36	34
1-42	43	19	10	15
1-43	44	34	25	39
1-44	45	31	42	26
1-45	46	41	36	35
1-46	47	32	13	24
1-47	48	31	29	28
1-48	49	24	38	41
1-49	50	33	20	21

Table 1: Numbers For Symbol Selection

VISUAL SYMBOL COMMUNICATION INSTRUCTION

SYMBOLS LEARNED	SYMBOL IN INSTRUCTION	NUMBERS FOR SYMBOL SELECTION		
		I	II	III
1-50	51	23	47	35
1-51	52	32	31	22
1-52	53	23	29	25
1-53	54	26	27	48
1-54	55	28	29	30
1-55	56	25	50	31
1-56	57	28	26	44
1-57	58	48	22	43
1-58	59	51	19	32
1-59	60	17	55	44
1-60	61	49	20	30
1-61	62	33	34	35
1-62	63	48	30	17
1-63	64	39	18	36
1-64	65	38	48	60
1-65	66	39	36	20
1-66	67	62	66	37
1-67	68	35	56	48
1-68	69	23	51	38
1-69	70	41	39	40
1-70	71	57	69	40
1-71	72	59	65	27
1-72	73	62	32	66
1-73	74	41	22	52
1-74	75	35	23	68
1-75	76	70	58	42
1-76	77	61	72	46
1-77	78	41	74	26
1-78	79	42	45	63
1-79	80	43	46	37
1-80	81	58	77	44
1-81	82	37	45	46
1-82	83	49	47	71
1-83	84	57	62	69
1-84	85	53	47	30
1-86	87	75	27	69
1-87	88	50	51	79
1-88	89	38	82	28
1-89	90	81	53	52
1-90	91	80	65	34
1-91	92	73	9	75
1-92	93	53	54	62
1-93	94	72	92	83
1-94	95	37	59	76
1-95	96	67	45	64
1-96	97	43	55	21
1-97	98	42	90	86
1-98	99	62	40	20
1-99	100	78	46	95

Table 1: Numbers For Symbol Selection

RETENTION TESTING

In addition to the retention testing built into the Master Lesson Plan by the rotation of selected symbols previously learned, periodic retention testing of all symbols learned is recommended. The decisions when to begin and the frequency of retention testing may be left to the discretion of the instructor and may be contingent on when expressive programming begins as well as the student's progress in it. The following suggestions are offered.

Testing may begin after five to ten symbols are learned and may be conducted every two to three weeks. Before beginning retention testing, all symbols learned are listed on the Retention Testing Data Sheet (Figure 9). Using the VCD, four randomly or preselected symbols are presented in each of the four envelopes. Preselection of symbols may be done when symbols are visually similar and require simultaneous presentation for more precise discrimination assessment. If discrimination difficulties are identified in retention testing, symbols may be retaught or purposefully rotated together in symbol instruction. Beginning at any column on the Numbers for Retention Testing (Table 2), the instructor requests the student to look at the symbol placed in the envelope position indicated by number. Thus, if one began at the column on the far left, the first symbol verbally cued would be in the envelope 3, the second symbol cued would be in envelope 1, the next symbol cued would be in envelope 4, etc. Verbal cueing from the Numbers for Retention Testing may begin from any column. A check mark is placed in the Pass column of the Retention Testing Data Sheet for correct responses. Incorrect responses are written in the Fail column. When two symbols are tested and result in either an incorrect or a correct response, they are removed from the VCD, and two additional symbol cards are presented. Continue to follow this Retention Testing procedure by removing and replacing only two symbol cards at a time until all symbols have been tested.

Table 2.
Numbers for retention testing

3	1	4	4	3
1	3	2	1	1
4	3	1	2	4
2	4	3	1	2
1	1	1	1	2
1	2	3	2	1
2	1	4	4	2
3	4	3	2	3
4	4	3	2	4
3	3	4	4	3

Retention data may be evaluated in two ways. First, a running tally of percentage correct may be kept. Second, the particular incorrect responses may be analyzed. When incorrect responses are given for one particular symbol in two consecutive retention testing sessions, it should be placed in instruction again. When the two consecutively incorrect responses are the same symbol, it should be placed in instruction with the test symbol. When a symbol is correctly identified for ten consecutive retention testing sessions, it is eliminated from retention testing.

VISUAL SYMBOL COMMUNICATION INSTRUCTION
RETENTION TESTING DATA SHEET

NAME: Andy Wilson

DATE: Oct. 4

SYMBOL CONCEPT	PASS	FAIL
yes	✓	
no	✓	
drink	✓	
food	✓	
cottage	✓	
wheelchair	✓	
eye	✓	
ear	✓	
mouth	✓	
hand	✓	
man	✓	
woman	✓	
more	✓	
happy		✓ sad
sad		✓ happy
teacher	✓	
want	✓	
I	✓	

Figure 9: Recording With Retention Testing Data Sheet

VISUAL SYMBOL COMMUNICATION INSTRUCTION

Part I: Receptive Instruction

PHASE I: SYMBOL INTRODUCTION

PART A: Symbol Identification: First Symbol

Step 1. Demonstration
Step 2. Two-position Rotation
Step 3. Two-card Rotation
Step 4. Four-card Rotation

PART B: Symbol Identification: Second Symbol

Step 1. Demonstration
Step 2. Two-card Rotation
  Step 2. Supplement: Two-Position Rotation
Step 3. Four-card Rotation

PHASE II: SYMBOL DISCRIMINATION

PART A: Two-Part Discrimination

Step 1. Two-symbol Discrimination: First Symbol
Step 2. Two-symbol Discrimination: Second Symbol
Step 3. Two-part Discrimination: First/Second Symbols

PART B: Three-Part Discrimination

Step 1. Demonstration: Third Symbol
Step 2. Two-symbol Discrimination
Step 3. Three-symbol Discrimination
Step 4. Three-part Discrimination

PART C: Four-Part Discrimination

Step 1. Demonstration: Fourth Symbol
Step 2. Three-symbol Discrimination
  Step 2. Supplement: Two-symbol Discrimination
Step 3. Four-symbol Discrimination
Step 4. Four-part Discrimination

PHASE III: SYMBOL EXPANSION: MASTER LESSON PLAN

Step 1. Demonstration: New Symbol
Step 2. Four-symbol Discrimination
  Step 2. Supplement A: Three-symbol Discrimination
  Step 2. Supplement B: Two-symbol Discrimination
Step 3. Four-part Discrimination

PHASE I: Symbol Introduction

PART A: Symbol Identification: First Symbol

PREREQUISITE SKILLS: See candidate selection guidelines

OBJECTIVE: To teach identification of first symbol in four positions of the VCD.

MATERIALS: Visual Communication Display
Symbol Cards: First symbol card, three blank cards

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE I: Symbol Introduction

PART A: Symbol Identification: First Symbol

PREREQUISITES: See Candidate Selection Guidelines

MATERIALS: First symbol card

PREPARATION: Fill in data sheet A

TEACHING PROCEDURE

STEP I: Demonstration

Place first symbol card in envelope 1 of VCD.

Placing finger over envelope, look at symbol card, and say,

S, LOOK!

Turn on pointer-light #1. Say,

THIS MEANS _____, _____(first symbol, first symbol).

Lower hand. Turn off light.

Look at S. Observing eye response, say

S, (establish eye contact)

LOOK AT _____ (first symbol).

Turn on corresponding pointer-light immediately.

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card, immediately say, GOOD! Flash pointer-light. Attempt criterion: 3 consecutive correct in 5 trials. Keep symbol card in position. If criterion is made, go to Step 2.	If S does not look at symbol card within 5 seconds, repeat Demonstration. If S does not meet criterion, reevaluate student in terms of Candidate Selection guidelines.

PHASE I: Symbol Introduction

PART A: Symbol Identification: First Symbol

PREREQUISITES: Criterion performance IA, Step 1

MATERIALS: First symbol card

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 1 2 1 1 2 2 1 2 1 2

TEACHING PROCEDURE

STEP 2. Two Position Rotation

Place first symbol card in envelope 1, and say,

S, (establish eye contact)

LOOK AT _____ (first symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for symbol Placement. If criterion is made, go to Step 3.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(first symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 1.

PHASE I: Symbol Introduction

PART A: Symbol Identification: First Symbol

PREREQUISITES: Criterion performance IA, Step 2

MATERIALS: First symbol card, 1 blank card

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 2 1 1 1 2 2 1 2 1 1

TEACHING PROCEDURE

STEP 3: Two-Card Rotation

Place first symbol card in envelope 2, a blank card in envelope 1, and say,

S, (establish eye contact)

LOOK AT _____ (first symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement. If criterion is made, to Step 4.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(first symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 2.

PHASE I: Symbol Introduction

PART A: Symbol Identification: First Symbol

PREREQUISITES: Criterion performance on IA, Step 3

MATERIALS: First symbol card, 3 blank cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 1 3 3 2 1 4 4 1 1 3

TEACHING PROCEDURE

STEP 4: Four-Card Rotation

Place first symbol card in envelope 1, blank cards in envelopes 2, 3, 4, and say,

S, (establish eye contact)

LOOK AT _____ (first symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement. If criterion is made, go to Part B, Step 1.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(first symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD. and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 3.

PHASE I: Symbol Introduction

PART B: Symbol Identification: Second Symbol

PREREQUISITE SKILLS: Upon verbal request, S looks at first symbol in four positions of VCD, making the criterion of Phase I, Part A, Step 4.

OBJECTIVE: To teach identification of second symbol in four positions of the VCD.

MATERIALS: Visual Communication Display
Symbol Cards: Second symbol card, three blank cards

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE I: Symbol Introduction

PART B: Symbol Identification: Second Symbol

PREREQUISITES: Criterion performance on IA, Step 4

MATERIALS: Second symbol card

PREPARATION: Fill in data sheet A

TEACHING PROCEDURE

STEP 1: Demonstration

Place second symbol card in envelope 1 of VCD.

Placing finger over envelope, look at symbol card and say,

S, LOOK!

Turn on pointer-light #1. Say,

THIS MEANS _____, _____ (second symbol, second symbol).

Lower hand. Turn off light.

Look at S. Observing eye response, say,

S, (establish eye contact)

LOOK AT _____ (second symbol).

Turn on corresponding pointer-light immediately.

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, say, GOOD! Flash pointer-light. Attempt criterion: 3 consecutive correct in 5 trials. Keep symbol card in position. If criterion is made, go to Step 2.	If S does not look at symbol card within 5 seconds, repeat Demonstration. If S does not meet criterion, select another symbol card.

PHASE I: Symbol Instruction

PART B: Symbol Identification: Second Symbol

PREREQUISITES: Criterion performance on IB, Step 1

MATERIALS: Second symbol card, blank card

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 1 2 1 2 1 1 1 2 2 2

TEACHING PROCEDURE

STEP 2: Two-Card Rotation

Place second symbol card in envelope 1, a blank card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (second symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement. If criterion is made, go to Step 3.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(second symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, go to Step 2, Supplement.

PHASE I: Symbol Introduction

PART B: Symbol Identification: Second Symbol

PREREQUISITES: Criterion performance on IB, Step 1

MATERIALS: Second symbol card

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 1 2 1 2 2 1 2 2 2 1

TEACHING PROCEDURE

STEP 2, Supplement: Two-Position Rotation

Place second symbol card in envelope 1, and say,

S, (establish eye contact)

LOOK AT _____ (second symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement. If criterion is made, return to Step 2.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(second symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD. and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 1.

PHASE I: Symbol Introduction

PART B: Symbol Identification: Second Symbol

PREQUISITIES: Criterion performance on IB, Step 2

MATERIALS: Second symbol card, 3 blank cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SYMBOL PLACEMENT: 2 3 4 1 2 1 3 3 4 2

TEACHING PROCEDURE

STEP 3: Four-Card Rotation

Place second symbol card in envelope 2, blank cards in envelopes 1, 3, 4, and say,

S, (establish eye contact)

LOOK AT _____ (second symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol position according to Random Schedule for Symbol Placement. If criterion is made, go to Phase II, Part A, Step 1.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(second symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 2.

PHASE II: Symbol Discrimination

PART A: Two-Part Discrimination

PREREQUISITE SKILL: Upon verbal request, S looks at first and second symbols in four positions of the VCD, making the criterion of Phase I, Part B, Step 3.

OBJECTIVE: To teach symbol discrimination in a two-part task.

MATERIALS: Visual Communication Display
Symbol Cards: First and second symbol cards

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE II: Symbol Discrimination

PART A: Two-Part Discrimination

PREREQUISITES: Criterion performance on IB, Step 3

MATERIALS: First and second symbol cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR FIRST SYMBOL PLACEMENT: 1 1 2 2 1 1 1 2 2 1

TEACHING PROCEDURE

STEP 1: Two-Symbol Discrimination

Place first symbol card in envelope 1, second symbol card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (first symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Schedule for First Symbol Placement. If criterion is made, go to Step 2.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(first symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (IA, Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to IA, Step 4 (returning again to IIA, Step 1 after criterion performance).

PHASE II: Symbol Discrimination

PART A: Two-Part Discrimination

PREREQUISITES: Criterion performance on IIA, Step 1

MATERIALS: First and second symbol cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR SECOND SYMBOL PLACEMENT: 2 1 2 1 2 2 2 1 1 1

TEACHING PROCEDURE

STEP 2: Two-Symbol Discrimination

Place first symbol card in envelope 1, second symbol card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (second symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Schedule for Second Symbol Placement. If criterion is made, go to Step 3.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(second symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (IB, Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to IB, Step 3 (returning again to IIA, Step 2 after criterion performance).

PHASE II: Symbol Discrimination

PART A: Two-Part Discrimination

PREREQUISITES: Criterion performance on II A, Step 2

MATERIALS: First and second symbol cards

PREPARATION: Fill in data sheet A, including random verbal cueing

RANDOM SCHEDULE FOR VERBAL CUEING: 1 1 2 2 1 1 1 2 2 2

TEACHING PROCEDURE

STEP 3: Two-Part Discrimination

Place first symbol card in envelope 1 and second symbol card in envelope 2.

With symbol cards remaining in position, say,

S, LOOK AT _____ (first symbol),

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing verbal cueing according to Random Schedule for Verbal Cueing. If criterion is made, go to Part B, Step 1.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (IA or B, Step 1, as indicated) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to II A, Step 1 or 2 as determined by symbol most frequently in error.

PHASE II: Symbol Discrimination

PART B: Three-Part Discrimination

PREREQUISITE SKILLS: Upon verbal request, S looks at the correct symbol in a two-part discrimination task, making the criterion of Phase II, Part A, Step 3.

OBJECTIVE: To teach symbol discrimination in a three-part task.

MATERIALS: Visual Communication Display
Symbol Cards: First, second, and third symbol cards.

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE II: Symbol Discrimination

PART B: Three-Part Discrimination

PREREQUISITES: Criterion performance on II A, Step 3

MATERIALS: Third symbol card

PREPARATION: Fill in data sheet A

TEACHING PROCEDURE

STEP 1. Demonstration

Place third symbol card in envelope 1 of VCD.

Placing finger over envelope, look at symbol card and say,

S, LOOK!

Turn on pointer-light #1. Say,

THIS MEANS _____, _____ (third symbol, third symbol).

Lower hand. Turn off light.

Look at S. Observing eye response, say,

S, (establish eye contact)

LOOK AT _____ (third symbol)

Turn on corresponding pointer-light immediately.

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, say, GOOD! Flash pointer-light. Attempt criterion: 3 consecutive correct responses in 5 trials. Keep symbol card in position. If criterion is made, go to Step 2.	If S does not look at symbol card within 5 seconds, repeat Demonstration. If S does not meet criterion, select another symbol card.

PHASE II: Symbol Discrimination

PART B: Three-Part Discrimination

PREREQUISITES: Criterion performance on II B, Step 1

MATERIALS: Second and third symbol cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR THIRD SYMBOL PLACEMENT: 1 2 1 1 2 1 2 1 2 1

TEACHING PROCEDURE

STEP 2: Two-Symbol Discrimination

Place third symbol card in envelope 1, second symbol card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (third symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Schedule for Third Symbol Placement. If criterion is made, go to Step 3.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(third symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 1.

PHASE II: Symbol Discrimination

PART B: Three-Part Discrimination

PREREQUISITES: Criterion performance on II B, Step 2

MATERIALS: First, second, and third symbol cards

PREPARATION: Fill in data sheet B, including symbol names reflected by numbers numbers from Random Card Placement

TEACHING PROCEDURE

STEP 3: Three-Symbol Discrimination

Place third symbol card in envelope 1, first and second symbol cards in envelopes 2 and 3, respectively, and say,

S, (establish eye contact)

LOOK AT_____(third symbol).

Random Card Placement

Envelope 1	Envelope 2	Envelope 3
3	1	2
3	2	1
1	2	3
2	3	1
1	3	2
2	1	3
1	2	3
1	3	2
3	1	2
2	3	1

REINFORCEMENT PROCEDURE

If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say,

GOOD!

Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Card Placement.

If criterion is made, go to Step 4.

CORRECTION PROCEDURE

If response is incorrect, repeat,

S, (establish eye contact)

LOOK AT_____(third symbol).

Turn on corresponding pointer-light.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect again, follow Demonstration procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, return to Step 2.

PHASE II: Symbol Discrimination

PART B: Three-Part Discrimination

PREREQUISITES: Criterion performance on IIB, Step 3

MATERIALS: First, second, and third symbol cards

PREPARATION: Fill in data sheet B, including random verbal cueing

RANDOM SCHEDULE FOR VERBAL CUEING: 3 3 1 1 3 2 1 2 2 1

TEACHING PROCEDURE

STEP 4: Three-Part Discrimination

Place first symbol card in envelope 1 and second and third symbol cards in envelopes 2 and 3, respectively.

With symbol cards remaining in position, say,

S, LOOK AT _____ (third symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing verbal cueing according to Random Schedule for Verbal Cueing. If criterion is made, go to Part C, Step 1.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT _____(symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1, with symbol in error) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 3.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITE SKILLS: Upon verbal request, S looks at correct symbol in a three-part discrimination task, making criterion of Phase II, Part B, Step 4.

OBJECTIVE: To teach symbol discrimination in a four-part task.

MATERIALS: Visual Communication Display
Symbol Cards: First, second, third, and fourth symbol cards.

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITES: Criterion performance on II B, Step 4

MATERIALS: Fourth symbol card

PREPARATION: Fill in data sheet A

TEACHING PROCEDURE

STEP 1: Demonstration

Place fourth symbol card in envelope 1 of VCD.

Placing finger over envelope, look at symbol card and say,

S, LOOK!

Turn on pointer-light #1. Say,

THIS MEANS _____, _____ (fourth symbol, fourth symbol).

Lower hand. Turn off light.

Look at S. Observing eye response, say,

S, (establish eye contact)

LOOK AT _____ (fourth symbol).

Turn on corresponding pointer-light immediately.

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, say, say, GOOD! Flash pointer-light. Attempt criterion: 3 consecutive correct responses in 5 trials. Keep symbol card in position. If criterion is made, go to Step 2.	If S does not look at symbol card within 5 seconds, repeat Demonstration. If S does not meet criterion, select another symbol card.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITES: Criterion performance on II C, Step 1

MATERIALS: Second, third, and fourth symbol cards

PREPARATION: Fill in data sheet B, including symbol names reflected by numbers from Random Card Placement

TEACHING PROCEDURE

STEP 2: Three-Symbol Discrimination

Place fourth symbol card in envelope 1, second and third symbol cards in envelopes 2 and 3, respectively, and say,

S, (establish eye contact)

LOOK AT_____(fourth symbol).

Random Card Placement		
Envelope 1	Envelope 2	Envelope 3
4	2	3
2	4	3
3	2	4
4	2	3
2	3	4
3	4	2
4	2	3
4	3	2
2	3	4
3	2	4

REINFORCEMENT PROCEDURE

If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say,

GOOD!

Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Card Placement.

If criterion is made, go to Step 3.

CORRECTION PROCEDURE

If response is incorrect, repeat,

S, (establish eye contact)

LOOK AT_____(fourth symbol).

Turn on corresponding pointer-light.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect again, follow Demonstration procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, go to Step 2, Supplement.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITES: Criterion performance on II C, Step 1

MATERIALS: Third and fourth symbol cards

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR FOURTH SYMBOL PLACEMENT: 1 1 2 1 1 2 2 1 2 2

TEACHING PROCEDURE

STEP 2, Supplement: Two-Symbol Discrimination

Place fourth symbol card in envelope 1, third symbol card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (fourth symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Schedule for Fourth Symbol Placement. If criterion is made, return to Step 2.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(fourth symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 1.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITES: Criterion performance on IIC, Step 2

MATERIALS: First, second, third, and fourth symbol cards

PREPARATION: Fill in data sheet B, including symbol names reflected by numbers from Random Card Placement.

TEACHING PROCEDURE

STEP 3: Four-Symbol Discrimination

Place fourth symbol card in envelope 1, first symbol card in envelope 2, second symbol card in envelope 3, third symbol card in envelope 4, and say,

S, (establish eye contact)

LOOK AT _____(fourth symbol).

	Random Card Placement			
	Envelope 1	Envelope 2	Envelope 3	Envelope 4
	4	1	2	3
	3	1	4	2
	1	3	2	4
	2	4	3	1
	3	1	2	4
	4	2	1	3
	1	2	4	3
	2	4	3	1
	1	3	2	4
	4	2	1	3

REINFORCEMENT PROCEDURE

If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say,

GOOD!

Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Card Placement.

If criterion is made, go to Step 4.

CORRECTION PROCEDURE

If response is incorrect, repeat,

S, (establish eye contact)

LOOK AT_____(fourth symbol).

Turn on corresponding pointer-light.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect again, follow Demonstration procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, return to Step 2.

PHASE II: Symbol Discrimination

PART C: Four-Part Discrimination

PREREQUISITES: Criterion performance on II C, Step 3

MATERIALS: First, second, third, and fourth symbol cards

PREPARATION: Fill in data sheet B, including random verbal cueing

RANDOM SCHEDULE FOR VERBAL CUEING: 4 3 4 2 3 1 3 1 4 3

TEACHING PROCEDURE

STEP 4: Four-Part Discrimination

Place symbol card in envelope 1, and second, third, and fourth symbol cards in envelopes 2, 3, and 4, respectively.

With cards remaining in position, say,

S, LOOK AT _____ (fourth symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say; GOOD! Proceed to next trial, following Teaching Procedure and changing verbal cueing according to Random Schedule for Verbal Cueing. If criterion is made, go to Phase III, Step 1.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (of symbol in error) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 3.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITE SKILLS: Upon verbal request, S looks at correct symbol in a four-part discrimination task, making the criterion of Phase II, Part C, Step 4.

OBJECTIVE: To teach symbol discrimination and promote symbol retention in a four part task.

MATERIALS: Visual Communication Display
Symbol Cards: New symbol card, 3 selected symbol cards.

CRITERION: 80% correct in 10 trials with 3 of last 4 responses correct.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITES: Criterion performance on II C, Step 4

MATERIALS: New symbol card

PREPARATION: Fill in data sheet A

TEACHING PROCEDURE

STEP 1: Demonstration

Place new symbol card in envelope 1 of VCD.

Holding finger over envelope, look at symbol card and say,

S, LOOK!

Turn on pointer-light #1. Say,

THIS MEANS_____ , _____(new symbol, new symbol).

Lower hand. Turn off light.

Look at S. Observing eye response, say,

S, (establish eye contact)

LOOK AT _____(new symbol).

Turn on corresponding pointer-light immediately.

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at symbol card for 3 seconds, say, GOOD! Flash pointer-light. Attempt criterion: 3 consecutive correct responses in 5 trials. Keep symbol card in position. If criterion is made, go to Step 2.	If S does not look at symbol card within 5 seconds, repeat Demonstration. If S does not meet criterion, select another symbol card.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITES: Criterion performance on III, Step 1

MATERIALS: New and three selected symbol cards (Table 1)

PREPARATION: Fill in data sheet B, including symbol names reflected by numbers from Random Card Placement

TEACHING PROCEDURE

STEP 2: Four-Symbol Discrimination

Place new symbol card in envelope 1, three selected symbol cards in envelopes 2, 3, and 4, and say,

S, (establish eye contact)

LOOK AT_____(new symbol).

	Random Card Placement		
Envelope 1	Envelope 2	Envelope 3	Envelope 4
1	2	3	4
1	4	2	3
3	1	4	2
4	1	2	3
3	2	1	4
2	3	4	1
4	3	1	2
2	4	3	1
1	4	2	3
3	2	1	4

REINFORCEMENT PROCEDURE

If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say,

GOOD!

Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Card Placement.

If criterion is made, go to Step 3.

CORRECTION PROCEDURE

If response is incorrect, repeat,

S, (establish eye contact)

LOOK AT_____(new symbol).

Turn on corresponding pointer-light.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect again, follow Demonstration procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, go to Step 2, Supplement A.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITES: Criterion performance on III, Step 1

MATERIALS: New and two selected symbol cards (Table 1, Columns I and II)

PREPARATION: Fill in data sheet B, including symbol names reflected by numbers from Random Card Placement

TEACHING PROCEDURE

STEP 2, Supplement A: Three Symbol Discrimination

Place new symbol card in envelope 1, two selected symbol cards in envelopes 2 and 3, and say,

S, (establish eye contact)

LOOK AT _____ (new symbol).

Random Card Placement		
Envelope 1	Envelope 2	Envelope 3
1	2	3
2	3	1
3	2	1
1	2	3
1	3	2
2	1	3
3	2	1
1	3	2
2	3	1
3	1	2

REINFORCEMENT PROCEDURE

If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say,

GOOD!

Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Card Placement.

If criterion is made, return to Step 2.

CORRECTION PROCEDURE

If response is incorrect, repeat,

S, (establish eye contact)

LOOK AT_____(new symbol).

Turn on corresponding pointer-light.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect again, follow Demonstration procedure (Step 1) once.

If response is correct, flash pointer-light, say,

GOOD!

and attempt criterion.

If response is incorrect a third time, temporarily terminate session.

If criterion is not met, go to Step 2, Supplement B.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITES: Criterion performance on III, Step I

MATERIALS: New and one selected symbol card (Table 1, Column 1)

PREPARATION: Fill in data sheet A, including random numbers

RANDOM SCHEDULE FOR NEW SYMBOL PLACEMENT: 1 2 1 1 2 1 2 1 1 2

TEACHING PROCEDURE

STEP 2, Supplement B: Two-Symbol Discrimination

Place new symbol card in envelope 1, a selected symbol card in envelope 2, and say,

S, (establish eye contact)

LOOK AT _____ (new symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing symbol positions according to Random Schedule for New Symbol Placement If criterion is made, return to Step 2, Supplement A	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(new symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (Step 1) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 1.

PHASE III: Symbol Expansion: Master Lesson Plan

PREREQUISITES: Criterion performance on III, Step 2

MATERIALS: New and three selected symbol cards (Table 1)

PREPARATION: Fill in data sheet B, including random verbal cueing

RANDOM SCHEDULE FOR VERBAL CUEING: 4 1 3 3 4 2 3 1 2 1

TEACHING PROCEDURE

STEP 3. Four-Part Discrimination

Place new symbol card in envelope 1 and three selected cards in envelopes 2, 3, and 4.

With cards remaining in position, say,

S, LOOK AT _____ (symbol).

REINFORCEMENT PROCEDURE	CORRECTION PROCEDURE
If S looks at correct symbol card for 3 seconds, flash corresponding pointer-light and say, GOOD! Proceed to next trial, following Teaching Procedure and changing verbal cueing according to Random Schedule for Verbal cueing. If criterion is made, introduce a new symbol by repetition of Master Lesson Plan.	If response is incorrect, repeat, S, (establish eye contact) LOOK AT_____(symbol). Turn on corresponding pointer-light. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect again, follow Demonstration procedure (of symbol in error) once. If response is correct, flash pointer-light, say, GOOD! and attempt criterion. If response is incorrect a third time, temporarily terminate session. If criterion is not met, return to Step 2.

APPENDIX

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA SHEET A

NAME: _____

DATE	PHASE	PART	STEP	SYMBOL	1	2	3	4	5	6	7	8	9	10	% CORRECT

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA SHEET B

NAME: _____ DATE: _____

PHASE: _____ PART: _____ STEP: _____

SYMBOLS: 1. _____ 3. _____

2. _____ 4. _____

RANDOM CARD PLACEMENT

TRIALS	ENVELOPE 1	ENVELOPE 2	ENVELOPE 3	ENVELOPE 4
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

% Correct: _____

VISUAL SYMBOL COMMUNICATION INSTRUCTION
DATA FLOW SHEET

NAME: _____

DATE	PHASE	PART	STEP	NO. TRIALS	NO. CORRECT RESPONSES	% CORRECT	INITIAL

VISUAL SYMBOL COMMUNICATION INSTRUCTION
SYMBOL INFORMATION SHEET

NAME: _____

SYMBOL NUMBER	SYMBOL NAME	DATE INTRODUCED	DATES OF ROTATION USAGE

VISUAL SYMBOL COMMUNICATION INSTRUCTION
RETENTION TESTING DATA SHEET

NAME: _____

DATE: _____

SYMBOL NAME	PASS	FAIL

SUGGESTED READINGS

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SUGGESTED MATERIALS

Blissymbols are available from:

Blissymbolics Communication Foundation
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Toronto, Ontario
Canada, M4G2L1

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